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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/685,308
Filing Date: October 14, 2003
Appellant(s): HAUSER ET AL.

Patrick J. O'Shea
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed November 26, 2008 appealing from the Office action mailed June 3, 2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is incorrect. A correct statement of the status of the claims is as follows:

This appeal involves claims 1, 5, 7-11, 13, 17 and 20-28.

Claim 19 is drawn to a canceled claim and therefore subsequently canceled.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

A substantially correct copy of appealed claim 19 appears on page 19 of the Appendix to the appellant's brief. The minor errors are as follows: the claim status identifier is incorrect and should be labeled canceled.

(8) Evidence Relied Upon

JP361095536A (certified translation included)	Totokawa	05-1986
6197615	Song	3-2001
20010010949	Miyaki et al.	08-2001
5458158	Kawanabe	10-1995
5247202	Popovic et al.	09-1993
Webster's Encyclopedia of Dictionaries	John Gage Allee	1981, Ottenheimer Publishers, Inc.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Totokawa (J.P. 361095536A).

3. Totokawa (e.g. Fig. 1-8) discloses

(cl. 1) a leadframe (6); a platform (2); an electronic member (11) located on the platform and connected to the leadframe by electrical conductors (12); and a housing (20) which encloses the electronic member and the platform, where first and second support regions (e.g. protrusions,2b, stretching out; Fig. 3) each comprising a support provided on the platform on corresponding peripheral portions to support the platform during fabrication of the housing, where the housing upper and lower support indentations (e.g. 21-24; e.g. recess taken up by molding dies, 15/16/17; Fig. 7-8) formed therein that expose an upper and lower surfaces respectively of an outer peripheral portion of each lobe (Fig. 8) to thereby allow each lobe to support the platform during fabrication of the housing (Fig. 5→7) where at least a portion of the first and second support regions project beyond the housing subsequent to the fabrication of the housing (Fig. 9);

(cl. 7, 8) where the leadframe comprises a plurality of connecting pieces (e.g. 2B; Fig. 5) that protrudes from the housing (Fig. 8), where the at least one connecting piece is connected to the electronic member (Col. 6, Lines 5-10).

4. Totokawa does not appear to show that its supports are rounded and therefore pursuant to its plain and ordinary meaning lobes.

5. However, applicant has not disclosed that his dimensions are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. As such, making the shape of protrusion rounded would have been obvious to one of ordinary skill in the art since it has been held that mere dimensional limitations are, prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose,

produce an unexpected result, or are otherwise critical. See, for example, In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984); In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Totokawa (J.P. 361095536A) in combination with Song et al. (U.S. 6,197,615).

7. Totokawa discloses the elements stated in paragraphs 3-5 of this office action, but fails to disclose at least one notch-shaped depression provided within a transition zone. 8. Song (Fig. 3) utilizes notches formed in its leads/ tabs/Paddle conductive surfaces.

9. It would have been obvious to one of ordinary skill in the art to incorporate notches in any part of the leads including lobes/tabs of Totokawa and portions connecting tabs to platform/ e.g. transition zones in order to enhance bonding strength between the encapsulant and conductive material as taught by Song (Col. 3-4, Lines 61-10).

10. Claim 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Totokawa (J.P. 361095536A) in combination with Miyaki et al. (U.S. 2001/0010949).

11. Totokawa discloses the elements stated in paragraphs 3-5 of this office action, but fails to explicitly disclose its leadframe is a metal alloy or that it's coated with an alloy.

12. Miyaki utilizes a leadframe made from a metal alloy (Par. 0056).

13. It would have been obvious to one of ordinary skill in the art to form the frame of Totokawa with a metal alloy in order to provide a leadframe as required by Totokawa (Eng. Abstract).

14. Furthermore, the selected material would have been obvious to one of ordinary skill in the art, since it has been held that the selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in Sinclair & Carroll Co. v. Interchemical Corp., 325 U.S. 327, 65 USPQ 297 (1945). See M.P.E.P 2144.07.

15. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Totokawa (J.P. 361095536A) in combination and further in combination with Kawanabe. (U.S. 5,458,158).

16. Totokawa discloses the elements stated in paragraphs 3-5 of this office action, but does not show an anticorrosive film extends along at least a section of its lobe/supporting section.

17. Kawanabe (Fig. 2, 8) discloses an anticorrosive film (3, 111) that extends along at least as section of its lobe/supporting section (i.e. in contact with support, i.e. 101).

18. It would have been obvious to one of ordinary skill in the art to incorporate an anticorrosive film on the modified lobes of Totokawa, such that it extends along at least a section of lobe/supporting section of Kurihara, in order to prevent rusting as taught Kawanabe (Abstract).

19. Furthermore, see paragraph 15 of this office action.

20. Claims 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Totokawa (J.P. 361095536A) in combination with Popovic et al. (U.S. 5,247,202)

21. Totokawa (J.P. 361095536A) discloses the elements stated in paragraphs 4-6 of this office action, but fails to explicitly disclose its chip comprises a Hall Effect sensing device.

22. Popovic utilizes semiconductor hall sensing chips (Col. 2, Lines 57-59).

23. It would have been obvious to one of ordinary skill in the art to combine a hall sensor with the chip of Totokawa (J.P. 361095536A) in order to provide a magnetic field sensor as taught by Popovic (Col. 1, Lines 10-11).

24. Claim 17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Totokawa (J.P. 361095536A) in combination with Popovic et al. (U.S. 5,247,202) and Song et al. (U.S. 6,197,615).

25. Totokawa (e.g. Fig. 1-8) discloses

(cl. 21) a leadframe (6); a platform (2); a semiconductor die (11) located on the platform and connected to the leadframe by electrical conductors (12); and a package (20) that encloses the die and at least a central portion of the platform, where first and second support regions (e.g. ,2b, protrudes out; Fig. 3) each comprising a protrusion/support provided on the platform on corresponding peripheral portions to support the platform during fabrication of the housing, where the housing upper and lower support indentations (e.g. 21-24; e.g. recess taken up by molding dies, 15/16/17; Fig. 7-8) formed therein that expose an upper and lower surfaces respectively of an outer peripheral portion of each support (Fig. 8) to thereby allow each protrusion to support the platform during fabrication of the housing (Fig. 5→7) where at least a portion of the first and second support regions protrude and therefore project beyond the housing subsequent to the fabrication of the housing (Fig. 9).

26. Totokawa does not appear to show use of a magnetic sensing device, that its supports are rounded and therefore pursuant to its plain and ordinary meaning lobes or notch shaped depressions formed in its lobes providing moisture barriers within the housing.

27. Popovic utilizes semiconductor hall sensing chips (Col. 2, Lines 57-59) providing a magnetic sensor.

28. It would have been obvious to one of ordinary skill in the art to combine a hall sensor with the chip of Totokawa (J.P. 361095536A) in order to provide a magnetic field sensor as taught by Popovic (Col. 1, Lines 10-11).

29. Furthermore, with respect to a magnetic sensing element in a package like Totokawa, it teaches use of a platform, support and resin packaging as claimed as a means to house a component.

30. Because use of platforms and supports as claimed is one of finite methods to solve the problem of protecting components by providing housings as evidenced by Totokawa, it would have been obvious to one of ordinary skill in the art to utilize the packaging of Totokawa in order to protect components to be used within the semiconductor art. E.g. KSR Int'l v. Teleflex Inc., 127 S.Ct. 1727,1743, 550 U.S. _,17 (2007) (finding that when there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense).

31. With respect to applicant's supports being lobes, applicant has not disclosed that his dimensions are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. As such, making the shape of support/ protrusion rounded would have been obvious to one of ordinary skill in the art since it has been held that mere dimensional limitations are, prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. See, for example, In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); Gardner v. TEC Systems, Inc.,

725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984); In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

32. Neither Totokawa nor Popovic disclose notches in its lobes or along same axis.

33. However, Song (Fig. 3) utilizes notches formed throughout its leadframe member including along top and bottom of its leads/ tabs/Paddle/ conductive surfaces.

34. It would have been obvious to one of ordinary skill in the art to incorporate notches in the modified leadframe package including Totokawa's lobes/tabs, platform and areas connecting the lobes and platform (e.g. transition zone) such that notches are extend a long the same axis in order to enhance bonding strength between the encapsulant and its conductive material as taught by Song (Col. 3-4, Lines 61-10).

35. Moreover, notches formed along the leads form the same structure as claimed. As such the intended use limitation of the notches providing first and second moisture barriers would not impart patentability, since it has been held that the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987). See also, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

36. With respect to the preamble of a Hall Effect sensing device, the prior art forms the same structure as claimed. As such, the preamble does not impart patentability since it has been held that a preamble is denied the effect of a limitation where the

claim following the preamble is a self-contained description of the structure not depending for completeness upon the introductory clause. *Kropa v. Robie,* 88 USPQ 478 (CCPA 1951).

37. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Totokawa (J.P. 361095536A) in combination with Popovic et al. (U.S. 5,247,202).

38. Totokawa (e.g. Fig. 1-8) discloses

(cl. 21) a leadframe (6); a platform (2); a semiconductor die (11) located on the platform and connected to the leadframe by electrical conductors (12); and a package (20) that encloses the die and at least a central portion of the platform, where first and second support regions (e.g. protrusions,2b, stretching out; Fig. 3) each comprising a protrusion/support provided on the platform on corresponding peripheral portions to support the platform during fabrication of the housing, where the housing upper and lower support indentations (e.g. 21-24; e.g. recess taken up by molding dies, 15/16/17; Fig. 7-8) formed therein that expose an upper and lower surfaces respectively of an outer peripheral portion of each support (Fig. 8) to thereby allow each protrusion to support the platform during fabrication of the housing (Fig. 5→7) where at least a portion of the first and second support regions protrude and therefore project beyond the housing subsequent to the fabrication of the housing (Fig. 9).

39. Totokawa does not appear to show use of a magnetic sensing device or that its supports are rounded and therefore pursuant to its plain and ordinary meaning lobes.

40. Popovic utilizes semiconductor hall sensing chips (Col. 2, Lines 57-59) providing a magnetic sensor.

41. It would have been obvious to one of ordinary skill in the art to combine a hall sensor with the chip of Totokawa (J.P. 361095536A) in order to provide a magnetic field sensor as taught by Popovic (Col. 1, Lines 10-11).

42. Furthermore, with respect to a magnetic sensing element in a package like Totokawa, Totokawa, above, teaches use of a platform, support and resin packaging as claimed as a means to house a component.

43. Because use of platforms and supports as claimed is one of finite methods to solve the problem of protecting components by providing housings as evidenced by Totokawa, it would have been obvious to one of ordinary skill in the art to utilize the packaging of Totokawa in order to protect components to be used within the semiconductor art. E.g. KSR Int'l v. Teleflex Inc., 127 S.Ct. 1727,1743, 550 U.S. _,17 (2007) (finding that when there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense).

44. With respect to applicant's supports being lobes, applicant has not disclosed that his dimensions are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. As such, making the shape of support/ protrusion rounded would have been obvious to one of ordinary skill in the art since it has been held that mere dimensional limitations are, prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise

critical. See, for example, In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984); In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

45. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Totokawa (J.P. 361095536A) in combination with Popovic et al. (U.S. 5,247,202).

46. Totokawa (e.g. Fig. 1-8) discloses

(cl. 21) a leadframe (6); a platform (2); a semiconductor die (11) located on the platform and connected to the leadframe by electrical conductors (12); and a means (e.g. 15, 16, 17) for packaging the semiconductor die (20) and at least a central portion of the platform (e.g. housing surrounds platform) where first and second supports/ lobes (2b) are provided on opposite peripheral ends (e.g. left and right side) of the platform and extend along a common axis outside the means for packaging (e.g. bottom of support, 2b, exposed through holes, 21-24), the means for packaging has upper upper and lower support indentations (e.g. 21-24; e.g. recess taken up by molding dies, 15/16/17; Fig. 7-8) formed therein that expose an upper and lower surfaces respectively of an outer peripheral portion of each support (Fig. 8) to thereby allow each support to support the platform during fabrication of the means for packaging (Fig. 5→7) and each support is stretched out and therefore extends outside the means for packaging subsequent to fabrication of the means for packaging (e.g. molding cavity not covering supports; Fig. 5→9).

47. Totokawa does not appear to show use of a magnetic sensing device or that its supports are rounded and therefore pursuant to its plain and ordinary meaning lobes.

48. Popovic utilizes semiconductor hall sensing chips (Col. 2, Lines 57-59) providing a magnetic sensor.

49. It would have been obvious to one of ordinary skill in the art to combine a hall sensor with the chip of Totokawa (J.P. 361095536A) in order to provide a magnetic field sensor as taught by Popovic (Col. 1, Lines 10-11).

50. Furthermore, with respect to a magnetic sensing element in a package like Totokawa, Totokawa, above, teaches use of a platform, support and resin packaging as claimed as a means to house a component.

51. Because use of platforms and supports as claimed is one of finite methods to solve the problem of protecting components by providing housings as evidenced by Totokawa, it would have been obvious to one of ordinary skill in the art to utilize the packaging of Totokawa in order to protect components to be used within the semiconductor art. E.g. KSR Int'l v. Teleflex Inc., 127 S.Ct. 1727,1743, 550 U.S. _,17 (2007) (finding that when there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense).

52. With respect to applicant's supports being lobes, applicant has not disclosed that his dimensions are for a particular unobvious purpose, produce an unexpected result, or

are otherwise critical. As such, making the shape of support/ protrusion rounded would have been obvious to one of ordinary skill in the art since it has been held that mere dimensional limitations are, prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. See, for example, In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984); In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

53. Lastly, with respect to the means plus function language, although the prior art provides for equivalent housing means, applicant failed to use the precise claim language to invoke 112 6th paragraph. Pursuant to MPEP 2181 that says in part “A claim limitation will be presumed to invoke 35 U.S.C. 112, sixth paragraph, if… the phrase “means for ” or “step for ” must not be modified by sufficient structure, material, or acts for achieving the specified function.” Because applicant modifies with sufficient structure like "lobes...on peripheral ends of the platform". See e.g. Rodime PLC v. Seagate Technology, Inc., 174 F.3d 1294, 1303–04, 50 USPQ2d 1429, 1435–36 (Fed. Cir. 1999) (holding “positioning means for moving” does not invoke 35 U.S.C. 112, sixth paragraph, because the claim further provides a list of the structure underlying the means and the detailed recitation of the structure for performing the moving function removes this element from the purview of 35 U.S.C. 112, sixth paragraph)54. Claims 22, 24, 25, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Totokawa (J.P. 361095536A) and Popovic et al. (U.S.

5,247,202) as applied to claim 17 or 26 and further in combination with Song et al. (U.S. 6,197,615).

55. Modified Totokawa further discloses a hall effect sensing element, but does not disclose notches in its lobes, transition zone or along same axis.

56. However, Song (Fig. 3) utilizes notches formed throughout its leadframe member including along top and bottom of its leads/ tabs/Paddle/ conductive surfaces.

57. It would have been obvious to one of ordinary skill in the art to incorporate notches in the modified leadframe package including Totokawa's lobes/tabs, platform and areas connecting the lobes and platform (e.g. transition zone) such that notches are extend a long the same axis in order to enhance bonding strength between the encapsulant and its conductive material as taught by Song (Col. 3-4, Lines 61-10).

58. Moreover, notches formed along the leads form the same structure as claimed. As such the intended use limitation of the notches providing first and second moisture barriers would not impart patentability, since it has been held that the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987). See also, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

59. With respect to the preamble of a Hall Effect sensing device, the prior art forms the same structure as claimed. As such, the preamble does not impart patentability

since it has been held that a preamble is denied the effect of a limitation where the claim following the preamble is a self-contained description of the structure not depending for completeness upon the introductory clause. *Kropa v. Robie,* 88 USPQ 478 (CCPA 1951).

60. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Totokawa (J.P. 361095536A), Popovic et al. (U.S. 5,247,202) and Song et al. (U.S. 6,197,615) as applied to claim 22 and further in combination with Kawanabe (U.S. 5,458,158).

61. Neither Totokawa, Popovic nor Song appears to show an anticorrosive film extends along at least a section of its lobe/supporting section.

62. However, Kawanabe (Fig. 2, 8) discloses an anticorrosive film (3, 111) that extends along at least as section of its lobe/supporting section (i.e. in contact with support, i.e. 101)

63. It would have been obvious to one of ordinary skill in the art to incorporate an anticorrosive film on the modified lobes of Totokawa, in order to prevent rusting as taught Kawanabe (Abstract).

(10) Response to Argument

Response to Appellant's arguments regarding claim 1

Appellant contends that the first and second support don't extend beyond the housing, because there are resin caps along the ends of 2b [Brf. P. 11]. This should not be deemed persuasive, because the claim is broad and does not preclude cap portions. Likewise, the prior art lobes extends past its housing in the same manner as appellant's disclosed embodiment.

MPEP 2111.01 [R-5] says in part that "A CLAIM MUST BE GIVEN THEIR "PLAIN MEANING" UNLESS SUCH MEANING IS INCONSISTENT WITH THE SPECIFICATION. Appellant's specification provides no special definition for the terms extend or project.

The term extends means simply to stretch out as indicated in Webster's Encyclopedia of Dictionaries. Likewise the term project means to protrude. The housing or package is an encapsulating material that surrounds the component as admitted in appellant's specification on page 5, whereby the shape of the housing is defined by its perimeter.

In Totokawa, the recesses help define the boundaries/perimeter of the top portion of the package. The perimeter is not straight, but also includes portions/sidewalls defined by top recesses/holes (21, 22) that are closer to recess, 25 (see Totokawa's Fig. 8-9). Because the supports/tabs/lobes (2b) stretch out/ protrude and are exposed past the housing sidewall portions (e.g. holes) as shown in Figure 9, the tabs extend beyond a portion of its housing/package.

Contrary to appellant's assertion, nothing in the claim language precludes the supports from still extending/protruding past the housing while also having sections still covered with encapsulating material; the claim is broader than the embodiment argued by appellant. This would be improperly importing embodiments from appellant's specification. See MPEP 2111.01 (a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the - embodiment." Superguide Corp. v. DirecTV Enterprises, Inc., 358 F.3d 870, 875, 69 USPQ2d 1865, 1868 (Fed. Cir. 2004). See also Liebel-Flarsheim Co. v. Medrad Inc., 358 F.3d 898, 906, 69 USPQ2d 1801).

In addition, if we look to embodiments disclosed by appellant (Specification on page 6), he says "[t]he effect of the support **hole** 11 is that a **section of the bottom side** of the lobe element 7 **projects from the housing** 4..." [Emphasis added]. Appellant is correct that Totokawa has resin/caps on a portion of its supports. This is a result of once the dies are clamped down, a resin is poured into the cavity (see e.g. Totokawa. channel in Fig. 6, above 17). Notice that the cavity is not only above and below the chip, but there is also a small cavity portion in front of tab (2b; See Fig. 5).This is why when looking at Figure 8 the resultant package shows a seamless resin package between the upper and lower recess (e.g. 22, 24); resin is only in front of tab, 2b. In the packaging process the dies are removed leaving recesses where the protrusions were (see Totokawa Fig. 8; Engl. Translation P. 3-6). The resultant package has its tabs, 2b, **exposed** not only **on the top portion** through top recess, 22, as shown in Fig. 9, but also **on its bottom** through lower recess, 24 (English Translation P. 5, Lines 21-23). Totokawa's Figure 8 & 9 is the same as appellant's Figure 2 and 3 except for a small amount of resin being shown between upper and lower recesses. As such, at the very least, because a bottom side of the support/tab/lobe is exposed through its hole (e.g. Totokawa item 22) that section/side of the lobe is exposed even if the section covered with the cap is not.

Response to Appellant's arguments regarding claims 7 and 8

Appellant argues that claims 7 and 8 depend from claim 1, and should be allowable for at least the same reasons as the claim from which they depend. This argument is not persuasive since claim 1 is unpatentable for the reasons set forth above.

Response to Appellant's arguments regarding claim 5

Also, appellant contends that his invention is patentable, because allegedly Song does not disclose a transition zone, and even if it did it did then the notches would not be within its transition zone. This is not persuasive. Song was a secondary reference and not relied on for the teaching of a transition zone. Rather, Song was relied for the limited teaching of forming notches along lead frame elements.

In Song, the notches are shown on all areas of the leadframe members except for wire bond area (40a; Col. 3, Lines 40-44) including the bars supporting the die pad (Fig. 1B-3; Col. 2, Lines 30-35). However, contrary to appellant's assertion that Figure 3 of Song would show its transition zone devoid from notches citing area between 30 and ends of die pad (e.g. looking at area 40a), appellant fails to recognize that 40C still includes notches in the same areas that appellant considered a transition zone. Likewise, Song's support bars with no wirebond connection would also be covered along its top and bottom with notches, which would include a middle section that would be considered a transition zone (see Fig. 1B dimples along lead frame members; Col. 3, Line 40-44).

The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In this instance both references deal with packaged chips on lead frames, while Song as the secondary reference teaches forming notches along the entire top and bottom surfaces of lead frame members except for wire-bonding areas. Therefore, one of ordinary skill in the art working with Totokawa and Song would have found the claimed invention obvious, since it would be obvious to form notches throughout the leadframe members of chip packages like Totokawa for enhanced bonding strength; this would include the alleged transition zones as claimed by appellant.

Response to Appellant's arguments regarding claims 9 and 11

Appellant argues that claims 9 and 11 depend from claim 1, and should be allowable for at least the same reasons as the claim from which they depend. This argument is not persuasive since claim 1 is unpatentable for the reasons set forth above.

Response to Appellant's arguments regarding claim 10

Appellant argues that claim 10 depend from claim 1, and should be allowable for at least the same reasons as the claim from which they depend. This argument is not persuasive since claim 1 is unpatentable for the reasons set forth above.

Response to Appellant's arguments regarding claim 13

Appellant argues that claim 13 depend from claim 1, and should be allowable for at least the same reasons as the claim from which they depend. This argument is not persuasive since claim 1 is unpatentable for the reasons set forth above.

Response to Appellant's arguments regarding claim 21

Appellant argues that claim 21 should be allowable for at least the same reasons as argued for claim 1. This argument is not persuasive since claim 1 is unpatentable for the reasons set forth above.

Response to Appellant's arguments regarding claim 26

Appellant argues that claim 26 should be allowable for at least the same reasons as argued for claim 1. This argument is not persuasive since claim 1 is unpatentable for the reasons set forth above.

Response to Appellant's arguments regarding claim 17

Appellant argues that claim 17 should be allowable for at least the same reasons as argued for claim 1. This argument is not persuasive since claim 1 is unpatentable for the reasons set forth above.

Response to Appellant's arguments regarding claims 20, 22-25, 27 and 28

Appellant argues that claims 20, 22-25, 27 and 28 depend from claim 17, and should be allowable for at least the same reasons as the claim from which they depend. This argument is not persuasive since claim 17 is unpatentable for the reasons set forth above.

Response to Appellant's arguments regarding claim 19

Appellant argues that claim 19 depend from claim 17, and should be allowable for at least the same reasons as the claim from which they depend. This argument is not persuasive since claim 17 is unpatentable for the reasons set forth above.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Conferees:

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